



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,495	12/10/2004	Sohan Sarin	19391.0075	7090
7590	10/18/2006		EXAMINER	
Swidler Berlin Shereff Friedman Suite 300 3000 K Street N W Washington, DC 20007-5116			PHILLIPS, FORREST M	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/517,495	SARIN ET AL.
	Examiner Forrest M. Phillips	Art Unit 2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on ____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) Claim(s) ____ is/are allowed.
- 6) Claim(s) 1-25 is/are rejected.
- 7) Claim(s) ____ is/are objected to.
- 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. ____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. ____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>12/10/04</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: ____.

DETAILED ACTION

Claim Objections

Claim 7 is objected to because of the following informalities: Claim 7 recites a metallic liner, for which there is no antecedent basis, it is believed by examiner to be a typographical error and should have in fact read as acoustic liner for which there is antecedent basis and which all other claims are drawn to. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6,8—9 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Morimoto (US4828932).

With respect to claim 1 Morimoto discloses an acoustic liner (20 in figure 5) arranged to attenuate sound comprising a top sheet (1 in figure 5) having substantially linear characteristics and a liner core (4 in figure 5) or cavity, wherein the top sheet comprises a layer of metallic foam (column 3 lines 40-60).

With respect to claim 6 Morimoto further discloses wherein the liner core is a honeycomb core (refer to figure 5)(column 3 lines 40-60).

With respect to claim 8 Morimoto discloses wherein said top sheet further comprising a perforate sheet (3 in figure 5) attached to the metallic foam layer.

With respect to claim 9 Morimoto discloses wherein the metallic foam layer is arranged to withstand temperatures about 400 ° C (column 6 lines 42-46)

With respect to claim 13 Morimoto further discloses wherein the top sheet is compressed (column 6 lines 55-57).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-12, and 17-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto.

With respect to claims 10 and 11 Morimoto discloses the claimed invention except for the metallic foam layer comprises a metal or metal alloy including Nickel, Titanium and/or chromium, and that it is arranged to withstand temperatures around 700° C. It would have been obvious to one of ordinary skill in the art at the time the

invention was made to select one of these metals or alloys and thus allow the material to withstand such a temperature, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. refer also to (column 5 lines 50-56).

With respect to claim 12 Morimoto discloses the claimed invention except for the metallic foam is at least partly open-porous. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an open-porous foam since it was known in the art that open-porous foams have desirable air resistance characteristics.

With respect to claims 17-19 Morimoto discloses wherein the top sheet is designed for attenuating various acoustic environments (column 1 lines 10-17).

It has been held that a recitation with respect to the manner in which a claimed apparatus is to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987).

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto in view of Arcas et al. (US5175401).

Arcas discloses the importance of the nonlinearity factor (column 2 lines 13-17).

Morimoto in view of Arcas discloses the invention as claimed except for the range of nonlinearity. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select a nonlinearity factor according to the conditions of

use, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto in view of Alts (US6569509).

With respect to claim 5 Morimoto discloses the acoustic liner of claim 1.

Morimoto does not disclose wherein a first surface of said metallic foam layer is attached to one side of said liner core.

Alts discloses wherein a first side of a foam layer is attached to one side of a liner core (refer to figure 1).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Alt to attach the foam directly to the core of an acoustic liner with the acoustic liner of Morimoto.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto in view of Kraft (US6182787).

With respect to claim 7 Morimoto discloses the invention as claimed except for wherein the liner core is of metallic foam.

Kraft discloses that it is well known in the art to use either bulk materials such as metallic foam in an acoustic liner (column 1 lines 35-50).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Kraft that bulk type materials can and are used in an acoustic liner in the same position as resonator type structures with the liner of Morimoto. The motivation to use foam in place of the honeycomb structure is simplicity of construction.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto in view of Lowery et al.(US5962107).

With respect to claim 14 Morimoto discloses the acoustic liner according to claim 13.

Morimoto does not disclose wherein the top sheet is compressed to a different degree in different areas of the sheet.

Lowery discloses wherein a foamed layer (20 in figure 15) is compressed in to a different degree in different areas of the sheet.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Lowery with Morimoto to have the top sheet be compressed to different degrees to tune the sound absorption of the liner.

With respect to claim 15 Lowery further discloses wherein the degree of compression is stepwise increased/decreased over the top sheet (22 in figure 15).

With respect to claim 16 Lowery discloses wherein the degree of compression is continuously changed over the top sheet (unnumbered triangular indentations in figure 15).

Claims 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto in view of Ely et al (US4291080).

With respect to claim 20 Morimoto discloses the structure of the claimed invention though not the use of brazing.

Ely discloses the use of brazing to attach a metallic foam cover (12 to a honeycomb core. (column 2 line 55).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Ely to braze components with the structure taught by Morimoto to provide a means of securing the components not requiring adhesives.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto in view of Ely as applied to claim 20 above, and further in view of Alts (US6569509).

With respect to claim 21 Morimoto in view of Ely discloses the method according to 20.

Morimoto in view of Ely does not disclose wherein a perforated sheet is brazed onto the foam layer in forming the top sheet.

Alts discloses the use of a perforated layer (8 in figure 1).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Alts to include a perforated layer in the top sheet with the teachings of Ely to use brazing as a means of attaching with the liner of

Morimoto for the purpose of increasing the airflow resistance without the need for adhesives.

Claims 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morimoto in view of Ely as applied to claim 20 above, and further in view of Lowery.

With respect to claim 22 Morimoto in view of Ely discloses the invention as claimed except for wherein the top sheet is formed through applying pressure to selected areas of the top sheet surface.

Lowery discloses wherein a foamed layer is formed by applying pressure to selected areas (22 and unnumbered indentations in figure 15).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Lowery to have indentations compressed into a foam layer with the method of Morimoto in view of Ely.

With respect to claim 23 Lowery discloses wherein the pressure is applied to a different degree in different areas (refer to figure 15).

With respect to claim 24 Lowery discloses wherein the pressure applied over the different areas is stepwise increased/decreased (22 in figure 15).

With respect to claim 25 Lowery further discloses wherein the pressure applied over the different areas is increased/decreased in a continuous manner (unnumbered triangular indentations in figure 15).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wilson (US5414232); Yasukawa et al(US5594216); Sakai et al (US5494737); Bainbridge et al(US5766395); and Perdue(US6209680) .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Forrest M. Phillips whose telephone number is 5712729020. The examiner can normally be reached on Monday through Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 5712721988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FP



LINCOLN DONOVAN
SUPERVISORY PATENT EXAMINER